

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John A. Smart (Registration No. 34,929) on 4/9/2008.

The application has been amended as follows:

In claim 1,

1. (Currently Amended) In a database system, a self-tuning method for performing recovery operations by dynamically adapting how many recovery threads are spawned during recovery, the method comprising:
 - (a) spawning an initial recovery thread to perform recovery operations **for at least one database that may require recovery;**
 - (b) measuring I/O (input/output) performance with the initial recovery thread;

- (c) spawning a subsequent recovery thread to perform recovery operations;
- (d) measuring I/O performance with the subsequent recovery thread; and
- (e) self-tuning how many threads are spawned by continuing, as long as I/O performance does not degrade beyond a preselected percentage, to repeat steps (c) and (d) for spawning a desired number of additional recovery threads and when I/O performance measured for a just-spawned recovery thread degrades beyond the preselected percentage, putting the just-spawned recovery thread to sleep;

wherein a user of the system is able to specify a particular number of concurrent recovery threads, and wherein the system generates an advisory if the particular number of concurrent recovery threads specified can be changed to achieve better I/O performance.

Claim 12 is cancelled.

In claim 15,

- 15. (Currently Amended) A database system performing self-tuning recovery operations by dynamically adapting how many recovery threads are spawned during recovery, the system comprising:

a computer having at least one processor;

a database system having at least one database that may require
recovery;

an initial recovery thread that is spawned to perform recovery operations,
wherein the system measures I/O (input/output) performance with
the initial recovery thread; and

a plurality of additional recovery threads that are spawned to perform
recovery operations, wherein the system dynamically adjusts how
many recovery threads are spawned based on I/O (input/output)
performance with each additional recovery thread that is spawned,
and wherein the system ceases spawning additional recovery
threads and puts a just-spawned recovery thread to sleep when I/O
performance for the just-spawned recovery thread degrades
beyond a desired amount;

**wherein a user of the system is able to specify a particular number of
concurrent recovery threads, and wherein the system
generates an advisory if the particular number of concurrent
recovery threads specified can be changed to achieve better
I/O performance.**

In claim 27:

27. (Currently Amended) In a database system, an auto-tuning method for performing database recovery in a manner that dynamically adjusts how many recovery threads are spawned based on current performance, the method comprising:

 spawning a thread to perform database recovery and recording statistics about performance associated with that thread; and

 during recovery, dynamically adjusting how many threads are spawned by performing substeps of:

 attempting to spawn additional threads to perform database recovery and recording statistics about performance associated with each additional thread spawned;

 and if the performance measured for a just-spawned thread degrades beyond a desired amount, freezing execution of the just-spawned thread and ceasing any attempt to spawn additional threads for database recovery;

wherein a user of the system is able to specify a particular number of concurrent threads, and wherein the system generates an advisory if the particular number of concurrent threads specified can be changed to achieve better I/O performance.

Claim 38 is cancelled.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

Claims 1-7,9-11,13-21,23-25,27-33,35-37,39 and 40 are allowable over the prior art of record. The closest prior art of record Lahey (Patent Number 7,028,303) teaches processing jobs by waking sleeping worker threads (column 6, lines 4-20), however it fails to teach user specification of the number of threads and generating an advisory if changes can be made to improve performance, these limitations being indicated in claim 1, 15 and 27 as "a user of the system is able to specify a particular number of concurrent threads, and wherein the system generates an advisory if the particular number of concurrent threads specified can be changed to achieve better I/O performance".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jay Morrison
TC2100

/Tim T. Vo/
Supervisory Patent Examiner, Art
Unit 2168